

**REMARKS**

The claims have been amended in view of the Office action and in view of the remarks which follow, they are believed to be in condition for allowance.

**Claim Rejections - 35 USC § 103**

In part 2 of the Detailed Action, claims 1-10, 12-23 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Grigg et al. (US 6,337,122) in view of Jeng et al. (US 6,200,828), referred to as Grigg and Jeng hereinafter.

**The Office Action stated as follows:**

"Grigg et al. teaches a method of marking semiconductor chips by forming internal markings on a marking location upon an exterior surface of the chip for identification of the chip (col 1, lines 48+)."

**The referenced text of Grigg et al. states as follows:**

"As a result of the deficiencies associated with ink stamping, it has become increasingly popular to use a laser beam to mark the surface of a chip. Unlike ink stamping, laser marking is very fast, requires no curing time, has a consistently high quality, and can take place at the end of the manufacturing process so that only good chips are marked."

"Various machines and methods have been developed for marking a chip package with a laser. As illustrated in U.S. Pat. No. 5,357,077 to Tsuruta, U.S. Pat. No. 5,329,090 to Woelki et al., U.S. Pat. No. 4,945,204 to Nakamura et al., U.S. Pat. No. 4,638,144 to Latta, Jr., U.S. Pat. No. 4,585,931 to Duncan et al., and U.S. Pat. No. 4,375,025 to Carlson, a semiconductor device is placed in a position where a laser beam, usually produced by a carbon dioxide, Nd:YAG, or Nd:YLF laser, inscribes various characters or other information on a surface of the semiconductor device. Basically, the laser beam burns the surface of the chip package such that a different reflectivity from the rest of the chip package surface is formed. By holding the packaged chip at a proper angle to a light source, the information inscribed on the chip package surface by the laser can be read. Various materials are known in the art that are laser reactive (e.g., capable of changing color when contacted by a laser beam). As described in U.S. Pat. No. 4,861,620 to Azuma et al., U.S. Pat. No. 4,753,863 to Spanjer, and U.S. Pat. No. 4,707,722 to Folk et al., the part or component may be partially comprised of the laser markable material or have a coating of the material on the surface of the part or component to be marked."

**The referenced Office action stated further, as follows:**

"Grigg et al. is silent to the material formed over the marking location."

"Jeng et al. teaches forming a non-black optically transmissive material over at least the marking location on the one exterior surface of the chip which non-black optically transmissive/transparent material cannot be scraped off of the chip (abstract). It is understood that the transparent material covering the enclosed chip is non black, allows the internal markings of the chip to be viewed, and as an encapsulant, provides protection from damage as the result of environmental and handling packages, as is well known in the art."

The Jeng Abstract reads as follows:

“An IC package architecture and a method of manufacturing the same are provided. By this packaging method, a molded compound is first formed, which covers the entire packaging area of the leadframe but leaving a window to expose the area where the chip is to be mounted. After the chip is mounted and wire bonded, a dispensed compound is formed the window to enclose the chip therein. The dispensing material can be variably selected by the manufacturer in accordance with actual application requirements. For instance, the dispensing material can be either a transparent material to allow the enclosed chip to be transparent to the outside, or a colored material for some prespecified identification purpose of the IC package. Moreover, the packaging method can be utilized on current types of IC packages and can be realized by using existing equipment and processes in a cost-effective manner without having to invest on new additional ones.”

**JENG TEACHES AWAY FROM USING TRANSPARENT MATERIAL SHOWING BURIED INDICIA WITHOUT ANY HINT OF THE CONTEMPLATION OF SHOWING BURIED INDICIA**

A review of Jeng et al. shows that there is no mention or suggestion that the “optically transmissive material was located ‘over at least the marking location on the one exterior surface of the chip’ [emphasis added] which non-black optically transmissive/transparent material cannot be scraped off of the chip.” Instead, Jeng et al. did not address the issue of indicia being visible through an optically transmissive/transparent material. Instead, in the Abstract and repeatedly throughout the patent, Jeng et al explicitly mentioned use of “colored material for some prespecified identification purpose of the IC package”. Thus Jeng teaches away from the concept of the present invention, because the only form of identification of the device contemplated is color coding, not marked indicia. The Examiner is challenged to sustain the allegation concerning “*forming a non-black optically transmissive material over at least the marking location on the one exterior surface of the chip*” [Emphasis added]. Applicants have not been able to find text in Jeng which suggests the concept of a “marking location” on a chip covered by the layer taught by Jeng. Accordingly the reference is believed to be inapposite and to fail to teach what it is alleged to teach.

Recent cases, such as *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) and *Ruiz v. A.B. Chance Co.*, 234 F.3d 654; 57 U.S.P.Q. 2d 1161 (Fed. Cir. 2000) require a “motivation” before references can be combined. Since several references have been glued together, i.e. combined with an implicit teaching, the Examiner is asked to show the “motivation to combine” them with respect to claims 1-10, 12-23 and 25.

In accordance with *Graham v. John Deere*, the issues to be addressed by the USPTO are as follows:

- 1) Please state the reason, suggestion, or motivation present in the prior art, in the knowledge of those of ordinary skill in the art, or in the problem of foundation setting, which clearly and particularly would lead one of ordinary skill in the art to combine laser marking with covering the semiconductor chips with a non-black and/or optically transmissive encapsulating material over at least the marking location on the one exterior surface of the chip which non-black and/or optically transmissive material cannot be scraped off of the chip for prevention of replacement of the internal marking indicia by different markings. It is respectfully submitted that none of the prior art of record makes any statements which would support such a conclusion.
- 2) the differences between the claimed invention and the prior art are that the prior art references even when combined do not suggest as follows:
  - (a) covering the semiconductor chips with an optically transmissive/transparent material over indicia which identify the chips;
  - (b) material cannot be scraped off of the chip; and
  - (c) prevention of replacement of the internal marking indicia by different markings.
- 3) The secondary consideration that there has been a “failure of others to suggest the subject matter claimed” relating to prevention of scraping off of indicia is probative in the obviousness analysis under *Graham v. Deere*.

**The Office action stated further as follows:**

"Re claim 4, it is well known and conventional in the art that barcodes are laser inscribable into a semiconductor package/chip and accordingly, that such internal markings are read by electromagnetic radiation, as is well known in the art (Xu col 1, lines 48+ US 6,121,574 and Duncan et al. FIG 1 and US 4,585,931)."

**The Examiner is challenged under MPEP 2144.03 to uncover prior art sustaining the above "common knowledge" allegation.**

**The Office action stated further as follows:**

"Re claim 5, it is well known that glass (as taught by Jeng et al.) is transparent and can be colored without teaching away from the claimed invention. The choice and use of a colored glass that is transparent is an obvious smatter [sic] of design variation."

**The Examiner is challenged under MPEP 2144.03 to uncover prior art sustaining the above "common knowledge" allegation.**

**The Office action stated further as follows:**

"Re claim 6, it is understood that the glass as used by Jeng et al. prevents remarking indicia or identification marks on the chip."

"Re claim 7, it is well known that glass is an optically transmissive material and that glass over the chip prevents remarking silicon for a semiconductor package."

"Re claim 8, it is well known that indicia is read by reflecting radiation off of indicia, i.e. barcodes, machine readable indicia, etc."

"Re claims 9 and 10, the limitations have been discussed above."

"Re claim 12, Jeng et al. teaches that the colored material can be used for some prespecified identification purpose of the IC package. Though Jeng et al. is silent to the colored part being transparent, it is well known and obvious that glass or other suitable materials (plastic, polymers, etc.) for example, can be colored and transparent. Therefore, since Jeng et al. teaches colored parts for identification purposes, it would have been obvious to an artisan of ordinary skill in the art to use colored parts that are transparent as an obvious design variation to effect a desired result such as aesthetics, readability, identification means, etc., as transparent colored coatings/covers are well known in the art."

"Re claims 13-21, the limitations have been discussed above."

"Re claims 22,23, and 25, the limitations have been discussed above. Further it is well known that a contact site can be provided on a surface of a chip (FIG. 1 Jeng et al., Tsuruta US 5,357,077), as is well known and conventional in the art."


"At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Grigg et al. with those of Jeng et al."

"One would have been motivated to do this in order to view the encapsulated chip while protecting the chip at the same time."

With respect to all of the pending claims, as amended, it is reemphasized that recent cases, such as *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) and *Ruiz v. A.B. Chance Co.*, 234 F.3d 654; 57 U.S.P.Q. 2d 1161 (Fed. Cir. 2000) require a "motivation" before references can be combined. Since several references have been glued together with an implicit teaching, the Examiner is asked to show the "motivation to combine" them with respect to claims 1-10, 12-23 and 25.

In view of the amendments and the above remarks favorable action including allowance of the claims and the application as a whole are respectfully solicited.

Respectfully submitted,

  
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